

WHAT IS CLAIMED IS:

1. An information transmitting system in which a plurality of information processing apparatuses are interconnected with each other via a transmitting device capable of transmitting information in accordance with a first transmission mode for transmitting information so as to be synchronous to other information or a second transmission mode for transmitting information so as to be asynchronous to other information, said second transmission mode for transmitting said information at a higher speed than that of transmission in accordance with said first transmission mode, wherein said each information processing apparatus comprising:

a first exchange device for mutually exchanging encryption processing information, being employed for encrypting said information, between the information processing apparatuses via said transmitting device in said first transmission mode; and

a second exchange device for mutually exchanging encrypted information between said information processing apparatuses via said transmitting device in said second transmission mode.

2. An information transmitting method in a information transmission system in which a plurality of information processing apparatuses are interconnected with each other via a transmitting device capable of transmitting information in accordance with a first transmission mode for transmitting information so as to be synchronous to other information or a

second transmission mode for transmitting information so as to be asynchronous to other information, said second transmission mode for transmitting said information at a higher speed than that of transmission in accordance with said first transmission mode, the method comprising the processes of:

mutually exchanging encryption processing information, being employed for encrypting said information, between the information processing apparatuses via said transmitting device in said first transmission mode; and

mutually exchanging encrypted information between said information processing apparatuses via said transmitting device in said second transmission mode.

3. An information sending apparatus for sending information to an information receiving apparatus via a transmitting device capable of transmitting said information in accordance with a first transmission mode for transmitting information so as to be synchronous to other information or a second transmission mode for transmitting information so as to be asynchronous to other information, said second transmission mode for transmitting said information at a higher speed than that of transmission in accordance with said first transmission mode, said information sending apparatus comprising:

a first encrypting device for employing encryption processing information for encrypting said information, thereby encrypting specific information to be sent to said information receiving apparatus;

a first sending device for sending said encrypted specific information to said information receiving apparatus via said transmitting device in accordance with said second transmission mode;

5 a second encrypting device for encrypting said encryption processing information itself; and

a second sending device for sending said encrypted encryption processing information to said information receiving apparatus via said transmitting device in accordance with said first transmission mode.

4. The information sending apparatus according to claim 3, wherein said specific information is AV (Audio/Visual) information, and

15 said encryption processing information is an encryption key and an encryption table for encrypting the AV information.

5. The information sending apparatus according to claim 3, wherein said transmitting device transmits said encrypted specific information and said encrypted encryption processing information in conformity to IEEE (Institute of Electrical and Electronic Engineers) 1394 Standard, and

said first transmission mode is an isochronous transmission mode in the IEEE 1394 Standard and said second transmission mode is an asynchronous transmission mode in the IEEE 1394 Standard.

6. An information sending method of sending information to an information receiving apparatus via a transmitting device capable of transmitting said information in accordance with a first transmission mode for transmitting information so as to be synchronous to other information or a second transmission mode for transmitting information so as to be asynchronous to other information, said second transmission mode for transmitting said information at a higher speed than that of transmission in accordance with said first transmission mode, said information sending method comprising the processes of:

- employing encryption processing information for encrypting said information, thereby encrypting specific information to be sent to said information receiving apparatus;
- sending said encrypted specific information to said information receiving apparatus via said transmitting device in accordance with said second transmission mode;
- encrypting said encryption processing information itself; and
- sending said encrypted encryption processing information to said information receiving apparatus via said transmitting device in accordance with said first transmission mode.

7. An information receiving apparatus for receiving said encrypted specific information sent from said information sending apparatus according to claim 3, said information receiving apparatus comprising:

- a first acquisition device for acquiring said encrypted

specific information from said transmitting device;

a second acquisition device for acquiring said encrypted encryption processing information from said transmitting device;

5 a first decrypting device for decrypting said encrypted encryption processing information; and

a second decrypting device for decrypting said encrypted specific information employing said decrypted encryption processing information.

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8. The information receiving apparatus according to claim 7, further comprising a recording device for recording said decrypted specific information in a recording medium.

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9. An information receiving method in the information receiving apparatus for receiving said encrypted specific information sent from said information sending apparatus according to claim 3, said information receiving method comprising the processes of:

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acquiring said encrypted specific information from said transmitting device;

acquiring said encrypted encryption processing information from said transmitting device;

25 decrypting said encrypted encryption processing information; and

decrypting said encrypted specific information employing said decrypted encryption processing information.

10. An information transmitting system comprising: a transmitting device capable of transmitting information in accordance with a first transmission mode for transmitting information so as to be synchronous to other information or a second transmission mode for transmitting so as to be asynchronous to other information, said transmitting mode for transmitting said information at a higher speed than that of transmission in accordance with said first transmission mode; an information sending apparatus for sending said information via the transmitting device; and an information receiving apparatus for receiving said sent information via said transmitting device, wherein

(i) said information sending apparatus comprises:

a first encrypting device for employing encryption processing information for encrypting said information, thereby encrypting specific information to be sent to said information receiving apparatus;

a first sending device for sending said encrypted specific information to said information receiving apparatus via said transmitting device in accordance with said second transmission mode;

a second encrypting device for encrypting said encryption processing information itself; and

a second sending device for sending said encrypted encryption processing information to said information receiving apparatus via said transmitting device in accordance with said

first transmission mode,

(ii) said information receiving apparatus comprises:

a first acquisition device for acquiring said encrypted specific information from said transmitting device;

5 a second acquisition device for acquiring said encrypted encryption processing information from said transmitting device;

a first decrypting device for decrypting said encrypted encryption processing information; and

10 a second decrypting device for decrypting said encrypted specific information by employing said decrypted encryption processing information.

11. An information recording medium having a sending control
15 program recorded to be readable by a sending computer in an information sending apparatus for sending information to an information receiving apparatus via a transmitting device capable of transmitting said information in accordance with a first transmission mode for transmitting information so as to
20 be synchronous to other information or a second transmission mode for transmitting information so as to be asynchronous to other information, the second transmission mode for transmitting said information at a higher speed than that of transmission in accordance with said first transmission mode, said sending
25 control program causing said sending computer to function as:

a first encrypting device for employing encryption processing information for encrypting said information, thereby

encrypting specific information to be transmitted to said information receiving apparatus;

a first sending device for sending said encrypted specific information to said information receiving apparatus via said transmitting device in accordance with said second transmission mode;

a second encrypting device for encrypting said encryption processing information itself; and

a second sending device for sending said encrypted encryption processing information to said information receiving apparatus via said transmitting device in accordance with said first transmission mode.

12. An information recording medium having a receiving control program recorded to be readable by a receiving computer in an information receiving apparatus for receiving encrypted information transmitted from an information sending apparatus for sending information to said information receiving apparatus via a transmitting device capable of transmitting said information in accordance with a first transmission mode for transmitting information so as to be synchronous to other information or a second transmission mode for transmitting information so as to be asynchronous to other information, the second transmission mode for transmitting said information at a higher speed than that of transmission in accordance with said first transmission mode, said receiving control program causing said receiving computer to function as:

a first acquisition device for acquiring encrypted specific information from said information sending apparatus;

a second acquisition device for acquiring said encrypted encryption processing information from said information sending

5 apparatus;

a first decrypting device for decrypting said encrypted encryption processing information; and

10 a second decrypting device for decrypting said encrypted specific information employing said decrypted encryption processing information.

13. A computer data signal embodied in a carrier wave and representing a sequence of instructions executed by a computer in an information sending apparatus for sending information to
15 an information receiving apparatus via a transmitting device capable of transmitting said information in accordance with a first transmission mode for transmitting information so as to be synchronous to other information or a second transmission mode for transmitting information so as to be asynchronous to
20 other information, the second transmission mode for transmitting said information at a higher speed than that of transmission in accordance with said first transmission mode, said sequence of instructions comprising the steps of:

employing encryption processing information for
25 encrypting said information, thereby encrypting specific information to be transmitted to said information receiving apparatus;

sending said encrypted specific information to said information receiving apparatus via said transmitting device in accordance with said second transmission mode;

encrypting said encryption processing information
5 itself; and

sending said encrypted encryption processing information to said information receiving apparatus via said transmitting device in accordance with said first transmission mode.

10 14. A computer data signal embodied in a carrier wave and representing a sequence of instructions executed by a computer in an information receiving apparatus for receiving encrypted information transmitted from an information sending apparatus for sending information to said information receiving apparatus
15 via a transmitting device capable of transmitting said information in accordance with a first transmission mode for transmitting information so as to be synchronous to other information or a second transmission mode for transmitting information so as to be asynchronous to other information, the
20 second transmission mode for transmitting said information at a higher speed than that of transmission in accordance with said first transmission mode, said sequence of instructions comprising the steps of:

acquiring encrypted specific information from said
25 transmitting device;

acquiring said encrypted encryption processing information from said transmitting device;

decrypting said encrypted encryption processing
information; and

decrypting said encrypted specific information employing
said decrypted encryption processing information.

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